UNIVERSITATEA DE ŞTIINŢE AGRICOLE ŞI MEDICINĂ VETERINARĂ DIN CLUJ-NAPOCA
Facultatea de Agricultură
Calea Mănăştur 3-5, 400372, Cluj-Napoca
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No._____of _____ **USAMV form 0109020105 (discipline code)**

SUBJECT OUTLINE

1. Information on the programme

1.1. Higher education institution	**University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca**
1.2. Faculty	**Agriculture**
1.3. Department	Plant culture
1.4. Field of study	Agronomic
1.5. Cycle of study[1]	Master
1.6. Specialization/ Study programme	**Management of Natural and Ago-turistic Resources in the Mountain area**
1.7. Form of education	**IF**

2. Information on the discipline

2.1. Discipline name	**Systems of organic production**							
2.2. Course coordinator	Lecturer Florin Pacurar							
2.3. Seminar/ laboratory/ project coordinator	Lecturer Florin Pacurar							
2.4. Year of study	II	2.5. Semester	**1**	2.6. Evaluation type	sumative	2.7. Discipline status	Content[2]	DD
							Compulsoriness[3]	DI

3. Total estimated time (teaching hours per semester)

3.1. Hours per week – full time programme	4	**out of which: 3.2. lecture**	2	**3.3. seminar/ laboratory/ project**	2
3.4.Total number of hours in the curriculum	56	**out of which: 3.5. lecture**	28	**3.6.seminar/laboratory**	28
Distribution of the time allotted					**hours**
3.4.1. Study based on books, textbooks, bibliography and notes					35
3.4.2. Additional documentation in the library, electronic platforms and field experiences					45
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					15
3.4.4. Tutorials					15
3.4.5. Examinations					14
3.4.6. Other activities					
3.7. Total hours of individual study	124				
3.8. Total hours per semester	180				
3.9. Number of credits[4]	6				

4. Prerequisites (if applicable)

4.1. curriculum-related	Botany, Ecology, Pratology, Pratotechnics, Conservation of biodiversity
4.2. skills-related	The student must have knowledge regarding the vegetation of grasslands, the structure and functioning of ecosystems and agroecosystems, maintenance and conventional use of grassland systems, pastoral arrangement

5. Conditions (if applicable)

5.1. for the course	The course is held in plenary and is interactive. Master students can intervene during the teaching of the topic with questions or examples on the topic of discussion. The time allotted to the course is strictly adhered to, the masters being prohibited any other activities that are not related to the subject of the course (eg the use of mobile

	phones). The course begins with questions and discussions from the previously taught topic and ends with a brief recap of the topic presented in the current course. At the end of the course, a compilation of the subject taught is compulsory, when the masters ask questions and give their answers.No other activities are tolerated during the lecture, mobile phones should be closed
5.2. for the seminar/ laboratory/ project	The knowledge that the masters must acquire is based on heuristic methods, according to the previous knowledge acquired, the organic production systems being a synthesis discipline. The material basis of the faculty is the practical support for understanding the study methodology. Conversation, oral presentation, internet, video presentation, field visits, case studies, etc. it is the basis of active teaching and learning methodology. The masters will define an ecosystem at the beginning of the practical activities, which will be processed and modeled according to the theme of the practical work. In this way, the masters will acquire knowledge and skills specific to the (practical) ecological management of the grassland ecosystems.

Note: In the case of online teaching, the teaching methods are adapted to the online conditions and platforms used.

6. Cumulated specific competences

Professional competences	Awareness of the importance of the meadows for the conservation of biodiversity and the cultural landscape Acquiring general notions regarding the maintenance and use of grassland in the ecological system Acquiring a language suitable for biodiversity conservation and ecological use Recognition of the intensity of habitat use Recognition of habitat types and component species. Recognition of species with high indicator value for ecological and anthropogenic conditions of habitats. Capacity for the elaboration of some projects of maintenance and use of the meadows in ecological system (arrangement) Ability to develop projects to regenerate abandoned grasslands and regenerate biodiversity of grasslands (ecological reconstruction)
Transversal competences	The ability to interpret the functioning of a semi-natural grassland system and identify its management The ability to identify the intensity of management applied in a given habitat according to the indicator species The ability to develop a management plan for certain habitats in different categories of protected natural areas Ability to initiate and perform research activities. The ability to recognize the evolutionary direction of habitats (fluctuations and sequences) To demonstrate the ability to analyze the research directions specific to the areas of interest. To be able to think relevant scientific activities and to synthesize them into interdisciplinary projects. To participate and propose the formation of research teams in order to increase the scientific performance

7. Discipline objectives (based on the cumulated specific competences)

7.1. General objective	The knowledge transmitted includes a wide spectrum of concrete aspects of the ecological management of the natural grasslands, being emphasized negative aspects that lead to the degradation of the vegetation (the abandonment of the meadows), presenting the models of maintenance and the use of the meadows that conserve the fitodiversity.
7.2. Specific objectives	Within the course of Organic Production Systems, students from the MRNA master receive information on the following aspects: To know the extensive systems of grassland use and to be able to define the relative equilibrium state of a pratoecosystem. Have the ability to analyze the relationship between animal species and pasture. To know the means of maintenance and improvement of the meadows in ecological system To know the ecological way of use of lawn systems To know the basics regarding ecological systems in feed production. To know the means of ecological reconstruction of the meadows

8. Content

8.1. COURSE **Number of hours –28**	Teaching methods	Observation
	Lecture	1 lecture = 2 hours

The importance of grasslands for the conservation of biodiversity and the cultural landscape: justifying the conservation and ecological use of grassland systems, maintaining and regenerating grasslands with broad biodiversity, red lists of species and habitats.	Lecture	1 lecture
Meadows with high natural value - importance, definition, concept development, spread in Europe and Romania, classification;	Lecture	2 lectures
Classification of grassland ecosystems according to the intensity of use, degree of naturalness and hemerobia, species and vegetative structure, floristic composition.	Lecture	2 lectures
The grassland habitats in Romania: steppes and calcareous xeric meadows, silicic xeric meadows, alpine and subalpine meadows, wet meadows and high grass communities, mesophilic meadows;	Lecture	1 lecture
Maintenance of meadows in ecological system: objectives, cleaning works, water regime regulation, fertilization, self-sowing and over-sowing, etc.	Lecture	2 lectures
Use of meadows in ecological system - mowing: optimal mowing time, mowing height, mowing technique, grass drying methods, range of used machines and machines.	Lecture	2 lectures
Use of meadows in ecological system - grazing: preparation of pastures and animals, distribution of pastures according to the species of animals, the moment of beginning and ending grazing, grazing capacity, grazing systems, range of used machines and machines.	Lecture	2 lectures
Vegetation dynamics: general trends, successions in abandoned grasslands, abandonment of grasslands, succession models, regeneration of abandoned grasslands, mowing, mulching and grazing (as maintenance work), regeneration of grassland biodiversity through partial or total land mobilization.	Lecture	2 lectures

8.2. PRACTICAL WORKS **Number of hours – 28**	Teaching methods	Observation
	Theoretical presentation of	1 lab work (2

	practical works	hours/work)
Individual study on the conservation issues of grassland systems in our country	Individual activity / debate	1 Laboratory work
Presentation of species with indicative value for the intensity of maintenance and use of grasslands.	Group debate / work	1 Laboratory work
Each master must choose a meadow system with high natural value from the perimeter of a protected area; description of the stationary conditions and the floristic composition (with the chosen example the master will practice the following practical activities)	Individual activity / debate	2 Laboratory work
Identification of grassland habitats in a known area.	Individual activity / debate	2 Laboratory work
Elaboration of a project of maintenance of a meadow in ecological system.	Individual activity / debate	
Elaboration of a project on grassland mowing in an ecological system	Individual activity / debate	2 Laboratory work
Development of a project on the subject of grazing	Individual activity / debate	
Elaboration of a project of choice on the following topics: regeneration of abandoned grasslands or regeneration of biodiversity of grasslands through works of partial or total soil mobilization.	Individual activity / debate	2 Laboratory work
Checking knowledge	exam	

Compulsory bibliography:

1. *Course Support - PowerPoint Presentations (PPT)*
2. *Păcurar F ,Rotar I.2015, Ecopratologie , ed. Academicpres - manual didactic*
3. *Păcurar F ,Rotar I.2015, Ecopratologie , ed. Academicpres – îndrumător de lucrări practice*
4. *Pacurar și Rotar., 2014, Metode de studiu si interpretare a vegetației pajiștilor*
5. *Doniță N., Popescu A., Păucă-Comănescu, M., Mihăilescu S., Biriș I., (2005) Habitatele din România, Edituta Tehnică Silvică, http://www.editurasilvica.ro/carti/donita1/integral.pdf*

Optional bibliography:

1. *Carlier, L., I. Puia, I. Rotar,For a better grass production, Ed. Risoprint,*
2. *Revista Fourrages 2000-2013*
3. *Romanian Journal of Grassland and Forage Crops*

9. Corroborating the discipline content with the expectations of the epistemic community representatives, of the professional associations and of the relevant employers in the corresponding field

In order to identify ways of modernization and continuous improvement of the teaching and the content of the courses, with the most current topics and practical problems, the teachers participate in the annual meeting of the Romanian Society of Grasslands where they meet with the farmers, being debated current issues and perspectives. forage production in Romania and Europe

10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percentage of the final grade
10.4. Course	Knowledge of the conservation objectives of the meadows Knowledge of the classification of grassland ecosystems according to the intensity of management Knowledge of the grassland habitats in Romania Knowledge of the way of maintenance and use of meadows in ecological system Knowledge of the ecological mode of use of the lawn systems Knowledge of the means of ecological reconstruction of the meadows	summative(E)	70%
10.5.	To demonstrate practical skills regarding the problem	1 written check	30%

Seminar/Laboratory	of conservation of grassland systems, recognition of habitats with conservative value based on species with indicator value; to be able to elaborate projects for the maintenance and use of the meadows in ecological system; for the regeneration of abandoned grasslands or the regeneration of biodiversity of grasslands through works of partial or total mobilization of the soil.	is provided (case study).	
10.6. Minimum performance standards			
Mastery of scientific information transmitted through lectures and practical papers at an acceptable level. Obtaining the passing grade for the ongoing checks is a condition of promotability.			

[1] Cycle of studies - choose one of the three options: Bachelor/Master/Ph.D.

[2] according to the educational plan

[3] Discipline status (compulsoriness) - choose one of the options – **DI** (compulsory discipline) **DO** (optional discipline) **DFac** (facultative discipline).

[4] One credit is equivalent to 25-30 hours of study (teaching activities and individual study).

Filled in on
11.09.2020

Course coordinator
Lecturer Florin Pacurar

Laboratory work/seminar coordinator
Lecturer Florin Pacurar

Approved by the department on
14.09.2020

Head of the Department
Sef. lucr. dr. Cristina Moldovan